TP-110-02
Dec 14, 1989

U.S. DEPARTMENT OF TRANSPORTATION

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

LABORATORY TEST PROCEDURE

FOR

FMVSS 110

Tire Selection and Rims

SAFETY ASSURANCE
Office of Vehicle Safety Compliance
Room 6115, NSA-30
400 Seventh Street, SW
Washington, DC 20590

OVSC LABORATORY TEST PROCEDURE NO. 110
TABLE OF CONTENTS

1. PURPOSE AND APPLICATION

The Office of Vehicle Safety Compliance (OVSC) provides contracted laboratories with Laboratory Test Procedures (TPs) which serve as guidelines for obtaining compliance test data. The data are used to determine if a specific vehicle or item of motor vehicle equipment meets the minimum performance requirements of the subject Federal Motor Vehicle Safety Standard (FMVSS). The purpose of the OVSC Laboratory Test Procedures is to present a uniform testing and data recording format, and provide suggestions for the use of specific equipment and procedures. Any contractor interpreting any part of an OVSC Laboratory Test Procedure to be in conflict with a Federal Motor Vehicle Safety Standard or observing any deficiencies in a Laboratory Test Procedure is required to advise the Contracting Officer's Technical Representative (COTR) and resolve the discrepancy prior to the start of compliance testing.

Contractors are required to submit a detailed test procedure to the COTR before initiating the compliance test program. The procedure must include a step-by-step description of the methodology to be used.

The OVSC Laboratory Test Procedures are not intended to limit or restrain a contractor from developing or utilizing any testing techniques or equipment which will assist in procuring the required compliance test data.

NOTE:

The OVSC Laboratory Test Procedures, prepared for use by independent laboratories under contract to conduct compliance tests for the OVSC, are not intended to limit the requirements of the applicable FMVSS(s). In some cases, the OVSC Laboratory Test Procedures do not include all of the various FMVSS minimum performance requirements. Sometimes, recognizing applicable test tolerances, the Test Procedures specify test conditions which are less severe than the minimum requirements of the standards themselves. Therefore, compliance of a vehicle or item of motor vehicle equipment is not necessarily guaranteed if the manufacturer limits certification tests to those described in the OVSC Laboratory Test Procedures.

2. GENERAL REQUIREMENTS

This standard applies to passenger cars and specifies requirements for tire selection to prevent tire overloading. Passenger cars shall be equipped with tires that meet the requirements of FMVSS 109, New Pneumatic Tires - Passenger Cars.

The vehicle maximum load on the tire shall not be greater than the applicable maximum load rating specified in FMVSS 109; the vehicle normal load on the tire shall not be greater than the test load used in the high speed performance test specified in FMVSS 109.

A label or placard shall be affixed to the vehicle and display the following information:

A. Vehicle capacity weight.

B. Designated seating capacity.

C. Tire rating (from FMVSS 109).

D. Manufacturer's recommended tire size designation.

Each rim shall be constructed according to the definition contained in FMVSS 109 for use with the tire size designated for that vehicle and shall be capable of retaining a tire which has developed a rapid loss of inflation pressure at 60 miles per hour.

3. SECURITY

The contractor shall provide appropriate security measures to protect the OVSC test vehicles from unauthorized personnel during the entire compliance testing program. The contractor is financially responsible for any acts of theft and/or vandalism which occur during the storage of test vehicles. Any security problems which arise shall be reported by telephone to the Industrial Property Manager (IPM), Office of Contracts and Procurement, within two working days after the incident. A letter containing specific details of the security problem will be sent to the IPM (with copy to the COTR) within 48 hours.

The contractor shall protect and segregate the data that evolves from compliance testing before and after each vehicle. No information concerning the vehicle safety compliance testing program shall be released to anyone except the COTR, unless specifically authorized by the COTR or the COTR's Branch or Division Chief.

NO INDIVIDUALS, OTHER THAN CONTRACTOR PERSONNEL DIRECTLY INVOLVED IN THE COMPLIANCE TESTING PROGRAM, SHALL BE ALLOWED TO WITNESS ANY VEHICLE COMPLIANCE TEST UNLESS SPECIFICALLY AUTHORIZED BY THE COTR.

4. GOOD HOUSEKEEPING

Contractors shall maintain the entire vehicle compliance testing area, test fixtures and instrumentation in a neat, clean and painted condition with test instruments arranged in an orderly manner consistent with good test laboratory housekeeping practices.

5. TEST SCHEDULING AND MONITORING

The contractor shall submit a test schedule to the COTR prior to conducting the first compliance test. Tests shall be completed as required in the contract. Scheduling shall be adjusted to permit sample motor vehicles to be tested to other FMVSS as may be required by the OVSC. All testing shall be coordinated with the COTR to allow monitoring by the COTR and/or other OVSC personnel if desired.

6. TEST DATA DISPOSITION

The contractor shall make all vehicle preliminary compliance test data available to the COTR on location within four hours after the test. Final test data, including digital printouts and computer generated plots (if applicable), shall be furnished to the COTR within 5 working days. Additionally, the contractor shall analyze the preliminary test results as directed by the COTR. All backup data sheets, strip charts, recordings, plots, technician's notes, etc., shall be either sent to the COTR or destroyed at the conclusion of each delivery order, purchase order, etc.

7. GOVERNMENT FURNISHED PROPERTY (GFP)

ACCEPTANCE OF TEST VEHICLE

The Contractor has the responsibility of accepting the test vehicle from either a new car dealer or a vehicle transporter. In both instances, the contractor acts in the OVSC's behalf when signing an acceptance of the test vehicle. If the vehicle is delivered by a dealer, the contractor must check to verify the following:

A. All options listed on the "window sticker" are present on the test vehicle.

B. Tires and wheel rims are the same as listed.

C. There are no dents or other interior or exterior flaws.

D. The vehicle has been properly prepared and is in running condition.

E. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.

F. Proper fuel filler cap is supplied on the test vehicle.

If the test vehicle is delivered by a government contracted transporter, the contractor's test engineer should check for damage which may have occurred during transit.

A "Vehicle Condition" form will be supplied to the contractor by the COTR when the test vehicle is transferred from the new car dealer or between test contracts. The upper half of the form describes the vehicle in detail, and the lower half provides space for a detailed description of the post test condition. Vehicle Condition forms must be returned to the COTR with the copies of the Final Test Report or the reports will NOT be accepted.

NOTIFICATION OF COTR

The COTR must be notified within 24 hours after a vehicle has been delivered.

8. CALIBRATION OF TEST INSTRUMENTS

Before the contractor initiates the safety compliance test program, a test instrumentation calibration system will be implemented and maintained in accordance with established calibration practices. Guidelines for setting up and maintaining such calibration systems are described in MIL-C-45662A, "Calibration System Requirements". The calibration system shall be set up and maintained as follows:

A. Standards for calibrating the measuring and test equipment will be stored and used under appropriate environmental conditions to assure their accuracy and stability.

B. All measuring instruments and standards shall be calibrated by the contractor, or a commercial facility, against a higher order standard at periodic intervals NOT TO EXCEED TWELVE (12) MONTHS! Records, showing the calibration traceability to the National Institute of Standards and Technology (NIST), shall be maintained for all measuring and test equipment.

C. All measuring and test equipment and measuring standards will be labeled with the following information:

(1) Date of calibration
(2) Date of next scheduled calibration
(3) Name of the technician who calibrated the equipment

D. A written calibration procedure shall be provided by the contractor which includes as a minimum the following information for all measurement and test equipment:

(1) Type of equipment, manufacturer, model number, etc.
(2) Measurement range
(3) Accuracy
(4) Calibration interval
(5) Type of standard used to calibrate the equipment (calibration traceability of the standard must be evident)

E. Records of calibration for all test instrumentation shall be kept by the contractor in a manner which assures the maintenance of established calibration schedules. All such records shall be readily available for inspection when requested by the COTR. The calibration procedure must be approved by the COTR before the test program commences.

F. Both at the beginning and end of each test day, a calibration check shall be made and recorded for the records of the test being performed.

9. PHOTOGRAPHIC COVERAGE

Photographs shall be glossy black and white, 8-1/2 x 11 inches, and legible. A tag, label, or placard identifying the test vehicle model, NHTSA number and date or item of equipment number and date shall appear in each photograph and be legible. Each photograph shall be labeled as to the subject matter. As a minimum, the following photographs shall be included:

A. Left side view of the vehicle

B. Right side view of the vehicle

C. 3/4 frontal view from left side of vehicle

D. 3/4 rear view from right side of vehicle

E. Vehicle's certification label

F. Vehicle's tire information label (if not part of certification label)

G. Tire showing size and serial number

H. Rim markings

I. Close up of any failures

10. DEFINITIONS

ACCESSORY WEIGHT

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio, and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

CURB WEIGHT

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

MAXIMUM LOADED VEHICLE WEIGHT

The sum of curb weight, accessory weight, vehicle capacity loaded weight, and production options weight.

NORMAL OCCUPANT WEIGHT

150 pounds times number of occupants as determined by the Designated Seating Capacity (DSC):

DSC NUMBER OF OCCUPANTS	VEHICLE NORMAL LOAD (Number of Occupants)
2 through 4	2
5 through 10	3

OCCUPANT DISTRIBUTION

Distribution of occupants in a vehicle as determined by Vehicle Normal Load and Number of Occupants:

VEHICLE NORMAL LOAD NUMBER OF OCCUPANTS	OCCUPANT DISTRIBUTION
2	2 in Front
3	2 in Front and 1 in Second Seat

10. DEFINITIONS....Continued

PRODUCTION OPTIONS WEIGHT

The combined weight of those installed regular production options weighing over 5 pounds in excess of those standard weight items which they replace, NOT previously considered in Curb Weight or Accessory Weight, including roof rack, heavy duty battery, and special trim.

STOPPING DISTANCE

Distance vehicle travels from start of pedal force to complete stop.

VEHICLE CAPACITY WEIGHT

The rated cargo and luggage load plus 150 pounds times the vehicle's Designated Seating Capacity (DSC).

VEHICLE MAXIMUM LOAD ON THE TIRE

The load on an individual tire that is determined by distributing to each axle its share of the maximum Loaded Vehicle Weight and dividing by 2.

VEHICLE NORMAL LOAD ON THE TIRE

The load on an individual tire that is determined by distributing to each axle its share of the Curb Weight, Accessory Weight, and Normal Occupant Weight and dividing by 2.

11. PRETEST REQUIREMENTS

IN-HOUSE COMPLIANCE TEST PROCEDURE

Prior to conducting any compliance tests, contractors are required to submit a detailed in-house compliance test procedure and equipment list to the COTR which includes a step-by-step description of the methodology to be used and a detailed check-off list. Written approval must be obtained from the COTR before commencing testing so that all parties are in agreement. The contractor's test procedure shall contain a complete listing of test equipment and a detailed check-off list. There shall be no contradiction between the OVSC Laboratory Test Procedure and the contractor's in-house test procedure. The list of test equipment shall include instrument accuracy and calibration dates.

TEST DATA LOSS

A compliance test is not to be conducted unless all of the various test conditions specified in the applicable OVSC Laboratory Test Procedure have been met. Failure of a contractor to obtain the required test data and to maintain acceptable limits on test parameters in the manner outlined in the applicable OVSC Laboratory Test Procedure may require a retest at the expense of the contractor. The retest costs will include all costs associated with conducting the retest. The Contracting Officer of NHTSA is the only NHTSA official authorized to notify the contractor that a retest is required. The retest shall be completed within two (2) weeks after receipt of notification by the Contracting Officer that a retest is required. If a retest is conducted, no test report is required for the original test.

TEST EQUIPMENT AND REFERENCES

Test equipment shall be capable of measuring to the tolerances shown below:

	VISUAL	RECORDED
Vehicle Speed	± 1/2 mph	± 2 mph
Stopping Distance	± 1/2 foot	± 5 feet
Pressure	± 1 psi	
Ambient Temperature	± 1ºF	
Wind Velocity	± 2 mph	
Wind Direction	± 15ºF	
Vehicle Weight	± 10 lbs/Axle ± 5 lbs/Wheel Position	
Rim Dimensions	± 0.001 inch	
Deceleration	± 1 fpsps	± 2 FPSPS

11. PRETEST REQUIREMENTS....Continued

Continuous Recorder —

An instrument, i.e., an oscillograph, to make a permanent supplemental record of pressure, deceleration, distance, and vehicle speed vs. time with the same accuracies as indicated for the above direct reading instrumentation or as otherwise indicated.

OTHER EQUIPMENT

Ballast — Various increments to 1 pound minimum
Tire and Rim Association Gauges — As required
Manufacturers Shop Manual
AMA Specification For Vehicle Being Tested

All reference material used, but not included, in the implementation of this Test Procedure will be tabulated. These are to include any procedures, tables, legal references, references to the Federal Register, reports, publications, automotive service manuals, special tool designs, roadway or track plots, and other similar engineering information as required.

GENERAL TEST CONDITIONS

A. Data is to be furnished in every data blank provided on the report forms, or if not applicable, insert "NA," indicating otherwise on the same form the vehicle related reason or relationship which applies. Corrections are to be made by drawing a line through the data, leaving it legible and adding the corrected entry, initials, and date.

B. Every sheet of any document relating to the test, including automatic continuous recorder data, will contain the NHTSA number of the vehicle and positive identification of its relation to the test and an applicable signature.

C. All measurements, weighing and dynamic portions of the test will be performed with ambient air temperatures between 32°F and 100°F.

D. The test for Part III of the test will be performed with wind velocity between 0 mph and 10 mph, and wind direction will be recorded.

E. The fuel tank will be at least 90 percent full during Part III of the test.

F. The driver and observer (if present) must be restrained with the vehicle by the properly adjusted seat belt, head restraint, and any protective device included in the vehicle during testing for Part III of the test. Other protective devices are optional to the testing agent.

11. PRETEST REQUIREMENTS….Continued

G. Part III of the test will be performed on a paved surface which shall be flat (equal to or less than 1 percent grade) in any direction.

H. All weights and loads are to be indicated or recorded in pounds.

12. COMPLIANCE TEST EXECUTION

Testing will be accomplished as indicated below except as otherwise directed. Tests performed for Part II or Part III are intended to include testing to Part I.

12.1 TIRE LOAD LIMITS AND PLACARD

A. Establish and record the delivered curb weight of the vehicle and the front and rear axle distribution of the weight. Establish and record the weight of each wheel position.

B. Establish the actual options, accessories, and equipment installed on the vehicle at the time of delivery. Compare the vehicle window "sticker" list with the vehicle and verify that there are no deviations. Record the vehicle identification number (VIN).

C. Record the information on both sidewalls of each tire furnished, its serial number and its vehicle position. (Ref. FMVSS 109, S4.3)

D. Calculate the vehicle maximum load on the tire and the vehicle normal load on the tire, stating the name, page, and date of any reference material used, (i.e, AMA Specification). Production options, weight, accessory weight, curb weight, vehicle capacity weight, etc., must be determined.

E. Establish and record the existence and location of a placard and the data displayed thereon. Provide a legible 8-1/2" x 11" glossy black and white photograph of the placard and of its location.

F. Compare the information displayed on the placard with the actual vehicle data. Compare the actual number of seating positions, tire sizes, vehicle capacity weights, inflation pressures, loading conditions, etc., with the requirements of FMVSS 110, S4 for all indicated combinations. Compare the tire information with the applicable table in FMVSS 109.

G. Determine and report as Pass or Fail.

12.2 RIM DIMENSIONS

A. One mark will be made on the wheel and one mark will be made on the hub or bolt spider such that after removal the wheel may be remounted in its original position relative to the hub or bolt spider. These marks will be a minimum of 0.5" by 0.5". One mark will be made on the tire and one mark will be made on the rim flange such that after removal the tire may be remounted in its original position relative to the rim. These marks will be a minimum of 0.5" by 0.5".

B. Remove right front and left rear wheels and tires from the vehicle.

12. COMPLIANCE TEST EXECUTION....Continued

C. Visually inspect the rim of the wheel. Record any trade stamps, size marks, manufacturer's marks, or symbols, appearing on the rim or wheel. Record any damage, rough or sharp areas, or defects which may effect the function or performance of the rim. Inspect the tire bead area for loose rubber, cords, or other defects which may effect its performance.

D. Measure the rim at a cross section within 3 inches of the valve hole and record the rim width and measurement height. Verify that rim is the size and type specified in S4.4.1 of FMVSS 110. Mark the measured cross section with a durable mark.

E. Provide a legible 8" x 10" glossy black and white photograph of the rim contour for the full width of the rim for 1 cross section within 3" of the valve stem hole, and identify the section so recorded with a durable mark.

F. Compare rim dimensions and contours found with those indicated in the applicable reference in S4.4.1 of FMVSS 110.

G. Remount all wheels and tires in the original positions relative to the vehicle hub or both spider and wheel as marked and labeled.

H. Determine and report as Pass or Fail.

12.3 DEFLATED TIRE RETENTION

A. Establish and record the delivered curb weight of the vehicle and the front and rear distribution of that weight, as in Section 12.1.

B. Establish the actual options, accessories, and equipment installed on the vehicle at the time of delivery, as in Section 12.1.

C. Record the information on both sidewalls of each tire furnished, its serial number and its vehicle position, as in Section 12.1.

D. Calculate the vehicle maximum load on the tire, stating the name, page, and date of any reference material used (i.e., AMA Specifications), as in Section 12.1. Curb weight, accessories weight, production options weight, etc., must be determined.

E. Establish the target test load on the tire by adding 100 pounds of ballast on the seat and 50 pound of ballast on the floor for each seating position as specified under the definition of "Test Loads." Ballast the baggage area as indicated on the placard, and otherwise, ballast the vehicle as required to achieve the axle weight which will result in the "vehicle maximum load on the tire" on front and rear axle. Record weight by axle and wheel position.

12. COMPLIANCE TEST EXECUTION....Continued

F. Install instrumentation and set the actual test weight including driver, observer (if required), equipment, instrumentation and required ballast to equal the target test load on the tire. Record the weight and locations of the contributing items.

G. Secure all added items and ballast in vehicle.

H. Adjust tire pressure of all tires to that appearing on the placard for the recommended cold tire inflation pressure for the maximum loaded vehicle weight.

I. With the vehicle traveling in a straight line at 60 mph (+ 0 mph, - 1 mph), simulate the loss of inflation pressure in the left front tire through an opening at least equal to a 0.448 inch diameter hole.

Upon initial release of air, bring the vehicle to a stop using the most rapid constant deceleration rate attainable not exceeding 8 fpsps with no wheel skid. Record vehicle speed, pressure, deceleration, distance traveled after initial release of air, stopping distance, distance of uncontrolled deviation from a straight line, and test conditions. Permanent, continuous recording is required for vehicle speed, pressure and deceleration rate.

J. With the vehicle remaining in the stopped position, photographically record and verbally describe all separation of the tire bead from the rim flange on both inboard and outboard sides of the rim under test. Rotation of the wheel to permit access to upper inboard positions of the tire is to be done after outboard and lower inboard information is recorded.

K. Return the vehicle to pretest condition. Repeat Items F through J, using the right rear tire position (or other as directed).

13. POST TEST REQUIREMENTS

Return the vehicle to pretest condition utilizing the original tires and wheels in their original positions on the vehicle as labeled and marked. Substitute tires may be installed only as directed by the COTR. Use of spare wheel and tire are to be as directed by the COTR.

Determine and report as Pass or Fail.

14. REPORTS

14.1. MONTHLY STATUS REPORTS

The contractor shall submit a monthly Test Status Report and a Vehicle Status Report to the COTR. The Vehicle Status report shall be submitted until all vehicles are disposed of. Samples of the required reports are found in the report forms section.

14.2. APPARENT NONCOMPLIANCE

Any indication of a test failure shall be communicated by telephone to the COTR within 24 hours with written notification mailed within 48 hours (Saturdays and Sundays excluded). A Notice of Test Failure (see report forms section) with a copy of the particular compliance test data sheet(s) and preliminary data plot(s) shall be included. In the event of a test failure, a post test calibration check of some critically sensitive test equipment and instrumentation may be required for verification of accuracy. The necessity for the calibration shall be at the COTR's discretion and shall be performed without additional costs to the OVSC.

14.3 FINAL TEST REPORTS

14.3.1 COPIES

In the case of an apparent test failure, seven copies of the Final Test Report shall be submitted to the COTR for acceptance within three weeks of test completion. The Final Test Report format to be used by all contractors can be found in the "Report Section".

Where there has been no indication of an apparent noncompliance, three copies of each Final Test Report shall be submitted to the COTR for acceptance within three weeks of test completion. No payment of contractor's invoices for conducting compliance tests will be made prior to the Final Test Report acceptance by the COTR. Contractors are requested to NOT submit invoices before the COTR is provided with copies of the Final Test Report.

Contractors are required to submit the first Final Test Report in draft form within one week after the compliance test is conducted. The contractor and the COTR will then be able to discuss the details of both test conduct and report content early in the compliance test program.

Contractors are required to PROOF READ all Final Test Reports before submittal to the COTR. The OVSC will not act as a report quality control office for contractors. Reports containing a significant number of errors will be returned to the contractor for correction, and a "hold" will be placed on invoice payment for the particular test.

14. REPORTS....Continued

14.3.2 REQUIREMENTS

The Final Test Report and associated documentation (including photographs) are relied upon as the chronicle of the compliance test. The Final Test Report will be released to the public domain after review and acceptance by the COTR. For these reasons, each final report must be a complete document capable of standing by itself. The contractor should use **detailed** descriptions of all compliance test events. Any events that are not directly associated with the standard but are of technical interest should also be included. The contractor should include as much **detail** as possible in the report. Instructions for the preparation of the first three pages of the final test report are provided for standardization.

14.3.3 FIRST THREE PAGES

A. FRONT COVER

A heavy paperback cover (or transparency) shall be provided for the protection of the final report. The information required on the cover is as follows:

(1) Final Report Number such as 110-ABC-9X-001 where

110 is the FMVSS tested
ABC are the initials for the laboratory
9X is the Fiscal Year of the test program
001 is the Group Number (001 for the 1st test, 002 for the 2nd test, etc.)

(2) Final Report Title And Subtitle such as

SAFETY COMPLIANCE TESTING FOR FMVSS 110
Tire Selection and Rims
* * * * * * * * * * * * * * * * * *
ABC Motor Company
199X Saferider 4-door sedan
NHTSA No. CX0401

(3) Contractor's Name and Address such as

COMPLIANCE TESTING LABORATORIES, INC.
4335 West Dearborn Street
Detroit, Michigan 48090

NOTE: DOT SYMBOL WILL BE PLACED BETWEEN ITEMS (3) AND (4)

14. REPORTS....Continued

(4) Date of Final Report completion

(5) The words "FINAL REPORT"

(6) The sponsoring agency's name and address as follows

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6115 (NSA-30)
Washington, DC 20590

14. REPORTS….Continued

B. FIRST PAGE AFTER FRONT COVER

A disclaimer statement and an acceptance signature block for the COTR shall be provided as follows:

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By: _____

Approved By: _____

Approval Date: _____

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: _____

Acceptance Date: _____

14. REPORTS….Continued

C. SECOND PAGE AFTER FRONT COVER
A completed Technical Report Documentation Page (Form DOT F1700.7) shall be completed for those items that are applicable with the other spaces left blank. Sample data for the applicable block numbers of the title page follows.

Block 1 — REPORT NUMBER

110-ABC-9X-001

Block 2 — GOVERNMENT ACCESSION NUMBER

Leave blank

Block 3 — RECIPIENT'S CATALOG NUMBER

Leave blank

Block 4 — TITLE AND SUBTITLE

Final Report of FMVSS 110 Compliance Testing of 199X Saferider 4-door sedan, NHTSA No. CX0401

Block 5 — REPORT DATE

March 1, 199X

Block 6 — PERFORMING ORGANIZATION CODE

ABC

Block 7 — AUTHOR(S)

John Smith, Project Manager / Bill Doe, Project Engineer

Block 8 — PERFORMING ORGANIZATION REPORT NUMBER

ABC-DOT-XXX-001

Block 9 — PERFORMING ORGANIZATION NAME AND ADDRESS

ABC Laboratories
405 Main Street
Detroit, MI 48070

14. REPORTS....Continued

Block 10 — WORK UNIT NUMBER

Leave blank

Block 11 — CONTRACT OR GRANT NUMBER

DTNH22-9X-D-12345

Block 12 — SPONSORING AGENCY NAME AND ADDRESS

US Department of Transportation
National Highway Traffic Safety Administration
Office of Vehicle Safety Compliance
400 Seventh Street, SW, Room 6115, Washington, DC 20590

Block 13 — TYPE OF REPORT AND PERIOD COVERED

Final Test Report
Feb. 15 to Mar. 15, 199X

Block 14 — SPONSORING AGENCY CODE

NSA-30

Block 15 — SUPPLEMENTARY NOTES

Leave blank

Block 16 — ABSTRACT

Compliance tests were conducted on the subject 199X Saferider 4-door sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-110-XX for the determination of FMVSS 110 compliance. Test failures identified were as follows:

None

NOTE: Above wording must be shown with appropriate changes made for a particular compliance test. Any questions should be resolved with the COTR.

14. REPORTS....Continued

Block 17 — KEY WORDS

Compliance Testing
Safety Engineering
FMVSS 110

Block 18 — DISTRIBUTION STATEMENT

Copies of this report are available from--
NHTSA Technical Reference Division
Room 5108 (NAD-52)
400 Seventh St., SW
Washington, DC 20590
Telephone No. (202) 366-4946

Block 19 — SECURITY CLASSIFICATION OF REPORT

Unclassified

Block 20 — SECURITY CLASSIFICATION OF PAGE

Unclassified

Block 21 — NUMBER OF PAGES

Add appropriate number

Block 22 — PRICE

Leave blank

14. REPORTS….Continued

14.3.4 TABLE OF CONTENTS

Final test report Table of Contents shall include the following:

A. Section 1 — Purpose of Compliance Test

B. Section 2 — Test Data Summary

C. Section 3 — Test Data

D. Section 4 — Test Equipment List and Calibration Information

E. Section 5 — Photographs

F. Section 6 — Notice of Test Failure (if applicable)

15. DATA SHEETS

DATA SUMMARY SHEET

VEHICLE MAKE/MODEL/BODY STYLE: _____

VEHICLE NHTSA NO.: _____ VIN: _____

LABORATORY: _____

TEST START DATE:_____ ; COMPLETE DATE: _____

REQUIREMENT	PASS/FAIL
TIRE LOAD LIMITS AND PLACARD	
The vehicle must be equipped with tires that meet the requirements of S109. (S110, S4.1) (S109, S.4.3).	_____
The vehicle maximum load on the tire shall not be greater than the applicable maximum load rating specified. (S110, S4.2.1) (S109, Table 1)	_____
The vehicle normal load on the tire shall not be greater than the high speed performance test load specified. (S110, S4.2.2) (S109, S5.5)	_____
The placard must be permanently affixed to the glove compartment door or equally accessible location; and display the required information. (S110, S4.3)	_____
No inflation pressure other than the maximum permissible inflation pressure is specified unless as required. (S110, S4.3.1)	_____
RIM DIMENSIONS	
Each rim shall be constructed to the dimension of a rim or alternate specified for the tire size. (FMVSS No. 110, S4.4.1 and APPENDIX) (FMVSS No. 109 "Test Rim")	_____
Each rim shall be constructed to the dimension specified, dimensionally correct. (S110, S4.4.1 and APPENDIX) (S109, Test Rim)	_____

15. DATA SHEETS….Continued

REQUIREMENT	PASS/FAIL
DEFLATED TIRE RETENTION	
Each rim shall retain the deflated tire until the vehicle can be stopped.	_____

Statement of indication of compliance or noncompliance to S110 and data reference:

_____

_____

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 1

TIRE LOAD LIMITS AND PLACARD

LABORATORY: _____

DATE OF TEST: _____

VEHICLE MAKE/MODEL/BODY STYLE:_____

VEHICLE MANUFACTURER:_____

VEHICLE NHTSA NO.: _____ ; VIN: _____

LABORATORY REFERENCE NO.: _____ ; DATE RECEIVED: _____

REMARKS: _____

A. MEASURED WEIGHT DISTRIBUTION:

Ambient Temperature _____ ºF to _____ ºF ; Odometer (Start): _____ miles

Left Front: _____ lbs. Right Front: _____ lbs. Front Axle: _____ lbs.

Right Rear: _____ lbs. Left Rear: _____ lbs. Rear Axle: _____ lbs.

Delivered Curb Weight: _____ lbs.

B. ACCESSORIES INSTALLED:

ACCESSORY	YES	NO	ACCESSORY	YES	NO
Automatic Transmission			H.D. Brakes		
Power Steering			Ride Leveler		
Power Brakes			Roof Rack		
Power Windows			H.D. Battery		
Power Seats			Special Trim		
Radio			Air Bag(s)		
Heater					
Cruise Control					

15. DATA SHEETS....Continued

C. CURB ITEMS INSTALLED:

Seating Capacity: Front-_____ Rear-_____ Total-_____
Air Conditioning Yes( ) No( )

Additional Weight Optional Engine Yes( ) No( )

D. DEVIATIONS FROM VEHICLE'S WINDOW STICKER: _____

_____

_____

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 2

ACCESSORY AND OPTIONS WEIGHTS

LABORATORY: _____ ; TEST DATE:_____

LAB. REF. NO.: _____ : VEH. NHTSA NO.:_____

VEHICLE MAKE/MODEL: _____

A. WEIGHT OF ACCESSORIES (pounds)

ACCESSORY	INSTALLED	WEIGHT PER AMA SPECIFICATIONS				
		ACC.	STD.	FRT.	REAR	TOTAL
Auto. Transmission						
Power Steering						
Power Brakes						
Power Seats						
Radio						
Heater						
ACCESSORY WEIGHT						
INSTALLED ACCESSORY WEIGHT						

B. WEIGHT OF PRODUCTION OPTIONS (pounds)

PRODUCTION OPTION	INSTALLED	WEIGHT PER AMA SPECIFICATIONS				
		ACC.	STD.	FRT.	REAR	TOTAL
Heavy Duty Brakes						
Ride Leveler						
Roof Rack						
Heavy Duty Battery						
Special Trim						

Continued on next page

15. DATA SHEETS....Continued

B. WEIGHT OF PRODUCTION OPTIONS (pounds)....Continued

PRODUCTION OPTION	INSTALLED	WEIGHT PER AMA SPECIFICATIONS				
		ACC.	STD.	FRT.	REAR	TOTAL
WEIGHT OF PRODUCTION OPTIONS						
WEIGHT OF INSTALLED PRODUCTION OPTIONS						

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 3

CURB WEIGHT, NORMAL LOAD, CAPACITY WEIGHT, MAXIMUM LOAD

LABORATORY: _____ ; TEST DATE: _____

LAB. REF. NO.: _____ : VEH. NHTSA NO.: _____

VEHICLE MAKE/MODEL: _____

ALL WEIGHTS SHOWN IN POUNDS

A. CURB WEIGHT

		FRNT	REAR	TOTAL
(1)	Delivered Curb Weight (Scaled)	_____	_____	_____
(2)	Installed Acc. Weight (Data Sheet 2)	_____	_____	_____
(3)	Installed Prod. Opt. Wt. (Data Sheet 2)	_____	_____	_____

B. VEHICLE NORMAL LOAD ON THE TIRE

(1)	Curb Weight (Item A above)	_____	_____	_____
(2)	Accessories Weight (Data Sheet 2)	_____	_____	_____
(3)	Production Opt. Wt. (Data Sheet 2)	_____	_____	_____

Seating Capacity = _____
(from Tire Information Label or Placard)

Occupant from S110, Table _____

Occupant Distribution: Front Seat- _____ Second Seat-_____

(4)	Occ. Wt. Distributed Calculated From Scaled Weights	_____	_____	_____
(5)	TOTAL - - - - - - - - - - -	_____	_____	_____
	Vehicle Normal Load on the Tire = [(1) + (2) + (3) + (4)]/2	_____	_____	_____

15. DATA SHEETS....Continued

Pass/Fail

High Speed Test Load S109:

Installed Tire Size: Front- _____ ; Test Load- _____ ; _____

Rear- _____ ; Test Load- _____ ; _____

Others On Placard: Front-_____ ; Test Load- _____ ;_____

Rear- _____ ; Test Load- _____ ;_____

C. VEHICLE CAPACITY WEIGHT (From Tire Information Label or Placard)

(1) Designated Seating Capacity (DSC) = _____ x 150 lbs. = _____

(2) Rated Cargo and Luggage Load = _____

Vehicle Capacity Weight = _____

Pass/Fail - _____

DATA INDICATES NONCOMPLIANCE: ( )YES ( )NO

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 3.1

CURB WEIGHT, NORMAL LOAD, CAPACITY WEIGHT, MAXIMUM LOAD

LABORATORY: _____ ; TEST DATE: _____

LAB. REF. NO.: _____ : VEH. NHTSA NO: _____

VEHICLE MAKE/MODEL: _____

ALL WEIGHTS SHOWN IN POUNDS

D. VEHICLE MAXIMUM LOAD ON THE TIRE

		FRNT	**REAR**	**TOTAL**
(1)	Curb Weight (Item A)	_____	_____	_____
(2)	Accessory Weight (Data Sheet 2)	_____	_____	_____
(3)	Production Options Weight (Data Sheet 2)	_____	_____	_____
(4)	Vehicle Capacity Weight (Calculated from Scaled Weights)	_____	_____	_____
(5)	Maximum Loaded Vehicle Weight = [(1) + (2) + (3) + (4)]	_____	_____	_____
	Vehicle Maximum Load on Tire = (5)/2	_____	_____	_____

Installed Tires: PASS/FAIL

Size: Front- _____ ; Pressure- _____ psi

S109 Load Rating- _____ _____

Rear- _____ ; Pressure- _____ psi

S109 Load Rating- _____ _____

15. DATA SHEETS....Continued

Displayed Tires: PASS/FAIL

Size: Front- _____ ; Pressure- _____ psi

S109 Load Rating- _____ _____

Rear- _____ ; Pressure- _____ psi

S109 Load Rating- _____ _____

ALL WEIGHTS SHOWN IN POUNDS

E. VEHICLE LOAD ON THE TIRE FOR OTHER DISPLAYED CONDITIONS

		FRNT	REAR	TOTAL
(1)	Curb Weight (Item A)	_____	_____	_____
(2)	Accessory Weight (Data Sheet 2)	_____	_____	_____
(3)	Production Options Weight (Data Sheet 2)	_____	_____	_____
(4)	Loading Condition Description	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
	(Calculated From Scaled Weights)			
	Total - - - - - - - - - - - - - -	_____	_____	
	Vehicle Load On The Tire For The Loading Conditions: [(1) + (2) + (3) + (4)]/2	_____	_____	

Tires Designated For Loading Conditions: PASS/FAIL

Size: Front- _____ ; Pressure- _____ psi

S109 Load Rating- _____ _____

15. DATA SHEETS….Continued

Tires Designated For Loading Conditions: PASS/FAIL

Rear- _____ ; Pressure- _____ psi

FMVSS 109 Load Rating- _____ _____

REMARKS:

15. DATA SHEETS….Continued

Tires Designated For Loading Conditions: PASS/FAIL

Rear- _____ ; Pressure- _____ psi

FMVSS 109 Load Rating- _____ _____

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 4

TIRE INFORMATION LABEL OR PLACARD

LABORATORY: _____ ; TEST DATE:_____

LAB. REF. NO.: _____ : VEH. NHTSA NO.:_____

VEHICLE MAKE/MODEL:_____

PASS/FAIL

A. Description Of Placard: _____ _____

B. Description Of Placard Location: _____ _____

Permanently Affixed: _____

C. Enter Information From Placard: _____
Vehicle Capacity Weight-- _____ lbs.

Designated Seating Capacity (DSC) -- _____

Expressed In--

(1) Total No. Of Occupants _____

(2) Terms of Occupants For Each Seat Location _____

Manufacturer's Recommended Cold Tire Inflation Pressure
For Maximum Load Vehicle Weight:

FRONT- _____ psi REAR- _____ psi

All Other Recommended Inflation Pressures:

_____

All Other Recommended Loading Conditions:

_____

_____

15. DATA SHEETS....Continued

Manufacturer's Recommended Size Designation:

_____

All Other Manufacturer's Recommended Size Designations:

_____

PASS/FAIL

DATA CORRECTLY DISPLAYED - - - - - - - - - - - - - - - _____

D. For Every Inflation Pressure Listed Above Indicate--

(1) Less Than Maximum? (YES/NO) _____ _____

(2) Loading Condition Stated? (YES/NO) _____ _____

(3) Tire Pressure Load Rating From S109

FRONT- _____ _____
REAR- _____ _____

(4) Vehicle Load On Tire For Condition Data

Indicates Noncompliance (YES/NO) _____ _____

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATE SHEET 5

VEHICLE TIRE DATA

LABORATORY: _____ ; TEST DATE:_____

LAB. REF. NO.: _____ : VEH. NHTSA NO.: _____

VEHICLE MAKE/MODEL: _____

All tires on the vehicle are the same size: (YES/NO) _____

	LEFT FRONT TIRE	SPARE TIRE	PASS/ FAIL
Tire Size Designation	_____	_____	____
Maximum Inflation Pressure	_____	_____	____
Maximum Load Rating	_____	_____	____
Mfr. Name or Brand & Code	_____	_____	____
Tube or Tubeless	_____	_____	____
Sidewall (Plies & Composition)	_____	_____	____
	_____	_____	
	_____	_____	
Tread (Plies & Composition)	_____	_____	____
	_____	_____	
	_____	_____	

15. DATA SHEETS….Continued

		PASS/FAIL
Serial Number:	Left Front- _____	_____
	Right Front- _____	_____
	Left Rear- _____	_____
	Right Rear- _____	_____
	Spare- _____	_____

DATA INDICATES NONCOMPLIANCE: ( )YES ( )NO

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 6

RIM DIMENSIONS

TIRE RIM SIZE AND FLANGE

LABORATORY: _____ ; TEST DATE: _____

LAB. REF. NO.: _____ : VEH. NHTSA NO.: _____

VEHICLE MAKE/MODEL: _____

A. Rim Size & Flange:

	TIRE SIZE	SPECFD RIMS	MNTD RIMS	PASS/ FAIL
FRONT	_____	_____	_____	_____
REAR	_____	_____	_____	_____

REFERENCE USED: _____

B. Trade Stamps, Marks, Symbols: _____

Rim Manufacturer's Name or Label: _____

Other Rim/Wheel Marking: _____

Rim Inspection Comments: _____

_____

_____

Tire Inspection Comments: _____

_____

_____

15. DATA SHEETS….Continued

Wheel/Rim Construction (i.e., welded, one piece, cast, deep dish, etc.)

_____

_____

DATA INDICATES NONCOMPLIANCE: ( )YES ( )NO

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

15. DATA SHEETS....Continued

DATA SHEET 7

DEFLATED TIRE RETENTION

LABORATORY: _____ ; TEST DATE: _____

LAB. REF. NO.: _____ : VEH. NHTSA NO.: _____

VEHICLE MAKE/MODEL: _____

A. Retain Left Front:

Tire Pressure: _____ psi

Ambient Temperature: _____ degrees to _____ degrees F.

Size Of Deflation Opening: _____ in. in diameter

Speed: _____ mph ; Deceleration Rate: _____

Distance Traveled After Initial Release Of Air: _____

Distance Of Deviation: _____

Description Of Bead Separation, Outboard: _____

Description Of Bead Separation, Inboard: _____

B. Retain Right Rear:

Tire Pressure: _____ psi

Ambient Temperature: _____ degrees to _____ degrees F.

Size Of Deflation Opening: _____ in. in diameter

Speed: _____ mph ; Deceleration Rate: _____

Distance Traveled After Initial Release Of Air: _____

Distance Of Deviation: _____

Description Of Bead Separation, Outboard: _____

15. DATA SHEETS....Continued

Description Of Bead Separation, Inboard: _____

C. REMARKS: (Stability, Control, Suspension, etc.)

_____

_____

_____

PASS/FAIL

LEFT FRONT - - - - - - - - - - - - - _____

RIGHT REAR - - - - - - - - - - - - - _____

DATA INDICATES NONCOMPLIANCE: ( )YES ( )NO

REMARKS:

RECORDED BY: _____ ; DATE:_____

APPROVED BY: _____

16. FORMS

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 110 TEST DATE: _____

LABORATORY: _____

CONTRACT NO.:_____ DELV. ORDER NO.: _____

LABORATORY PROJECT ENGINEER'S NAME: _____

TEST SPECIMEN DESCRIPTION: _____

_____

VEHICLE NHTSA NO.:_____ VIN: _____

MFR: _____

TEST FAILURE DESCRIPTION: _____

_____

_____

_____

FMVSS REQUIREMENT, PARAGRAPH S _____

_____

NOTIFICATION TO NHTSA (COTR): _____

DATE:_____ BY: _____

REMARKS:

_____

_____

16. FORMS….Continued

MONTHLY TEST STATUS REPORT

FMVSS 110

DATE OF REPORT:

NO.	VEHICLE NHTSA NO., MAKE & MODEL	COMPLIANCE TEST DATE	PASS/ FAIL	DATE REPORT SUBMITTED	DATE INVOICE SUBMITTED	INVOICE PAYMENT DATE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

16. FORMS….Continued

MONTHLY VEHICLE STATUS REPORT

FMVSS 110

DATE OF REPORT:

NO.	VEHICLE NHTSA NO., MAKE & MODEL	DATE OF DELIVERY	ODOMETER READING	TEST COMPLETE DATE	VEHICLE SHIPMENT DATE	ODOMETER READING
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

APPENDIX

MOTOR VEHICLE SAFETY STANDARD NO. 110

Tire Selection and Rims-Passenger Cars
(Revised July 20, 1990)

S1. PURPOSE AND SCOPE

This standard specifies requirements for tire selection to prevent tire overloading.

S2. APPLICATION

This standard applies to passenger cars and to non-pneumatic spare tire assemblies for use on passenger cars.

S3. DEFINITIONS

ACCESSORY WEIGHT (AW)

The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio, and heater, to the extent that these items are available as factory installed equipment (whether installed or not).

CURB WEIGHT (CW)

The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

MAXIMUM LOADED VEHICLE WEIGHT (MLVW)

The sum of the following - -

A. CURB WEIGHT

B. ACCESSORY WEIGHT

C. VEHICLE CAPACITY WEIGHT

D. PRODUCTION OPTIONS WEIGHT

NON-PNEUMATIC

Used as defined in FMVSS 129, New Non-pneumatic Tires for Passenger Cars.

APPENDIX....Continued

NON-PNEUMATIC SPARE TIRE ASSEMBLY

A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

NON-PNEUMATIC TIRE and NON-PNEUMATIC TIRE ASSEMBLY

Used as defined in FMVSS 129, New Non-Pneumatic Tires for Passenger Cars.

NORMAL OCCUPANT WEIGHT (NOW)

150 pounds times the no. of occupants specified in the second column of Table I.

OCCUPANT DISTRIBUTION

Distribution of occupants in a vehicle as specified in the third column of Table I.

PRODUCTION OPTIONS WEIGHT (POW)

The combined weight of those installed regular production options weighing over 5 pounds in excess of those standard item which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

RIM

Used as defined in FMVSS 109.

VEHICLE CAPACITY WEIGHT (VCW)

The Rated Cargo and Luggage Load plus 150 pounds times the vehicle's Designated Seating Capacity (DSC).

VEHICLE MAXIMUM LOAD ON THE TIRE

That load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

VEHICLE NORMAL LOAD ON THE TIRE

That load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I) and dividing by two.

APPENDIX....Continued

WHEEL CENTER MEMBER

Used as defined in FMVSS 129, New Non-Pneumatic Tires for Passenger Cars.

S4. REQUIREMENTS

S4.1 GENERAL

Passenger cars shall be equipped with tires that meet the requirements of FMVSS 109, New Pneumatic Tires - Passenger Cars, except that passenger cars may be equipped with a non-pneumatic spare tire assembly that meets the requirements of FMVSS 129, New Non-Pneumatic Tires for Passenger Cars, and S6 and S8 of this standard. Passenger cars equipped with such an assembly shall meet the requirements of S4.3(e), S5, and S7 of this standard.

S4.2 TIRE LOAD LIMITS

S4.2.1. The vehicle maximum load on the tire shall not be greater that the applicable maximum load rating specified in one of the publications described in S4.4.1(b) of FMVSS 109 for the tire's size designation and type.

TABLE I
Occupant Loading and Distribution for Vehicle Normal Load for Various Designated Seating Capacities

Designated Seating Capacity, Number Occupants	Vehicle Normal Load, Number of Occupants	Occupant Distribution in a Normally-Loaded Vehicle
2 thru 4	2	2 in front
5 thru 10	3	2 in front 1 in second seat

S4.2.2 The vehicle normal load on the tire shall not be greater than the test load used in the high speed performance test specified in S5.5 of FMVSS 109 for that tire.

S4.3 PLACARD

A placard, permanently affixed to the glove compartment door or an equally accessible location, shall display the - -

A. Vehicle capacity weight (VCW)

APPENDIX....Continued

B. Designated seating capacity (DSC) expressed in terms of total number of occupants and in terms of occupants for each seat location

C. Vehicle manufacturer's recommended cold tire inflation pressure for maximum loaded vehicle weight (MLVW) and, subject to the limitations of S4.3.1, for any other manufacturer-specified vehicle loading condition

D. Vehicle manufacturer's recommended tire size designation

E. For a vehicle equipped with a non-pneumatic spare tire assembly, the non-pneumatic tire identification code with which that assembly is labeled pursuant to the requirements of S4.3(a) of FMVSS 129, New Non-Pneumatic Tires for Passenger Cars.

S4.3.1 No inflation pressure other than the maximum permissible inflation pressure may be specified unless - -

A. It is less than the maximum permissible inflation pressure

B. The vehicle loading condition for that pressure is specified

C. The tire load rating from Table I of FMVSS 109 for the tire at that pressure is not less than the vehicle load on the tire for that vehicle loading condition.

S4.4 RIMS

S4.4.1 REQUIREMENTS

Each rim shall - -

A. Be constructed to the dimensions of a rim that is listed pursuant to the definition of "test rim" in paragraph S3 of FMVSS 109 for use with the tire size designation with which the vehicles is equipped.

B. In the event of rapid loss of inflation pressure with the vehicle traveling in a straight line at a speed of 60 miles per hour, retain the deflated tire until the vehicle can be stopped with a controlled braking application.

S5. LOAD LIMITS FOR NON-PNEUMATIC SPARE TIRES

The highest vehicle maximum load on the tire for the vehicle shall not be greater than the load rating for the non-pneumatic spare tire.

S6. LABELING REQUIREMENTS FOR NON-PNEUMATIC SPARE TIRES OR TIRE ASSEMBLIES

APPENDIX....Continued

Each non-pneumatic tire or, in the case of a non-pneumatic tire assembly in which the non-pneumatic tire is an integral part of the assembly, each non-pneumatic tire assembly shall be permanently molded, stamped, or otherwise permanently marked into or onto both sides in letters or numeral not less than 0.156 inches high, the information specified in paragraphs S6.A through S6.B. Except, in the case of a non-pneumatic tire assembly which has a particular side that must always face outward when mounted on a vehicle, the information shown in paragraphs S6.A through S6.B. shall only be required on the outward facing side. The information shall be positioned on the tire or tire assembly such that it is not placed on the tread or the outermost edge of the tire and is not obstructed by any portion of any non-pneumatic rim or wheel center member designated for use with that tire in this standard or in FMVSS 129.

A. FOR TEMPORARY USE ONLY

B. MAXIMUM 50 M.P.H.

S7. REQUIREMENTS FOR PASSENGER CARS EQUIPPED WITH NON-PNEUMATIC SPARE TIRE ASSEMBLIES

S7.1 VEHICLE PLACARDING REQUIREMENTS

A placard, permanently affixed to the inside of the vehicle trunk lid or an equally accessible location adjacent to the non-pneumatic spare tire assembly, shall display the information set forth in S6 in block capitals and numerals not less than 0.25 inches high preceded by the words "IMPORTANT - USE OF SPARE TIRE" in letters not less than 0.375 inches high.

S7.2 SUPPLEMENTARY INFORMATION

The owner's manual of the passenger car shall contain, in writing in the English language and in not less than 10 point type, the following information under the heading "IMPORTANT - USE OF SPARE TIRE":

A. A statement indicating the labeling related to appropriate use for the non-pneumatic spare tire including at a minimum the information set forth in S6.A and S6.B and in S4.3(e).

B. An instruction to drive carefully when the non-pneumatic spare tire is in use, and to install the proper pneumatic tire and rim at the first reasonable opportunity

C. A statement that operation of the passenger car is not recommended with more than one non-pneumatic spare tire in use at the same time.

APPENDIX....Continued

S8. NON-PNEUMATIC RIMS AND WHEEL CENTER MEMBERS

S8.1 NON-PNEUMATIC RIM REQUIREMENTS

Each non-pneumatic rim that is part of a separable non-pneumatic spare tire assembly shall be constructed to the dimensions of a non-pneumatic rim that is listed pursuant to S4.4 of FMVSS 129 for use with the non-pneumatic tire, designated by its non-pneumatic tire identification code, with which the vehicle is equipped.

S8.2 WHEEL CENTER MEMBER REQUIREMENTS

Each wheel center member that is part of a separable non-pneumatic spare tire assembly shall be constructed to the dimensions of a wheel center member that is listed pursuant to S4.4 of FMVSS 129 for use with the non-pneumatic tire, designated by its non-pneumatic tire identification code, with which the vehicle is equipped.